ALBERTA ENERGY

ANNUAL REPORT MARCH 31 1988

Alberta

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Alberta
ENERGY

Office of the Minister

228 Legislature Building, Edmonton, Alberta, Canada T5K 2B6 403/427-3740

February 22, 1989

The Honourable Helen Hunley
Lieutenant Governor of the Province of Alberta

Your Honour

I have the honour to submit the Annual Report of Alberta Energy for the fiscal year ended March 31, 1988.

Respectfully submitted,

Neil Webber

Neil Webber
Minister of Energy

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MINISTER'S MESSAGE

The year 1987/88 was one of recovery for the Alberta energy industry. Following the 1986 oil price drop, the Alberta oil and gas industry responded to stronger, more stable prices with increased drilling and renewed interest in heavy oil and oil sands development. During the year, substantial progress was made in the process of natural gas deregulation. Deregulation of energy markets was reinforced by negotiation of the Free Trade Agreement between Canada and the United States.

A key objective of Alberta's energy policy is to provide a stable fiscal regime to encourage development, yet to remain responsive to major changes in the economic environment. Stronger prices in 1987, together with the royalty reductions and holidays announced by the Alberta Government in late 1986, and cost-cutting and restructuring by the industry, resulted in increased investment and activity in Alberta. Activity was further stimulated when the federal government, after extensive consultation with Alberta, introduced the Canadian Exploration and Development Incentive Program (CEDIP). However, toward the end of the fiscal year, international oil prices began to weaken.

During 1987 the Alberta Government negotiated with the federal government to allow industry surface rights access to the Wainwright Military Reserve. In the fall, Alberta contracted for a seismic program for part of the reserve and sold the results to industry at cost. The continuing negotiations permitted sale of the Alberta oil and gas rights, conclusion of agreements and exploratory drilling later in 1988.

The 1987 Throne Speech emphasized the need to proceed with development and upgrading of Alberta's heavy oil and oil sands resources and called for industry to bring projects forward for discussion. Industry responded enthusiastically with a number of proposals for heavy oil and oil sands development.

During the year, expansion was announced for a number of projects, including Esso Resources/Cold Lake, BP Resources/Wolf Lake and Suncor Fort McMurray. The announcements involved capital investment of approximately $750 million.

Negotiations began with the industry and the federal government for two major projects totalling investment of almost $5.5 billion: the Lloydminster Heavy Oil Upgrader and the Other Six Leases Operation (OSLO) oil sands project. Agreements to proceed were announced later in 1988.

In the natural gas sector, substantial progress was made in the process of natural gas deregulation.

In April, I announced that, in keeping with the report of the Energy Resources Conservation Board (ERCB) and the Public Utilities Board (PUB), natural gas users requiring long-term non-interruptible gas supplies should be protected by long-term contracts providing adequate supply protection.

During the year, Alberta regulatory procedures and royalty provisions were reviewed in the context of natural gas deregulation. This resulted in changes to the removal permit process to facilitate expeditious approval of direct sales of natural gas to large end users. The natural gas royalty system was changed to make it more compatible with a deregulated price environment.

With price deregulation, natural gas exporters were freer to compete in the U.S. market and gas exports increased in 1987. However, regulatory developments in the U.S. and

the delay in pipelines providing transportation service on an open access basis, coupled with the continuation of the U.S. "gas bubble", limited the rate of growth in gas exports.

During the year, attention focused on the negotiations leading to the Free Trade Agreement. The free trade initiative was supported by the Alberta Government and the petroleum industry because it reinforced deregulation and helped to ensure access to U.S. markets for Alberta producers.

In 1987, increasing attention was focused on improving the end use quality of Alberta coals and reducing mine site and transportation costs. A joint intergovernmental action committee was formed with the Deputy Prime Minister, Premier Getty and the Premiers of Ontario, Saskatchewan and British Columbia, to improve the competitiveness of western Canadian coal in the Ontario market. Alberta continued joint research with the industry to help maintain industry competitiveness in international as well as national markets.

The year marked returning confidence in the energy industry. After the disruptions of the previous year, industry and government could address longer term issues, including specific heavy oil and oil sands projects and more general programs to further the process of natural gas deregulation and reliance on market forces. I welcomed the opportunity to work with the various companies and associations of the oil and gas industry and the growing co-operation with the federal government.

The year 1987/88 was demanding for the Alberta Department of Energy. The new pricing environment, the issues resulting from deregulation, the increased importance of trade issues and the development of new energy project proposals all demanded fundamental analysis and consideration of policy alternatives. The department responded admirably to the challenges. I want to thank all staff for their commitment, professionalism and support.

OVERVIEW

The energy sector is vital to the economic well-being of Alberta. The province has more than 76 per cent of Canada's known reserves of conventional light/medium oils, 80 per cent of its natural gas, 100 per cent of its oil sands/bitumen and nearly 86 per cent of its coal.

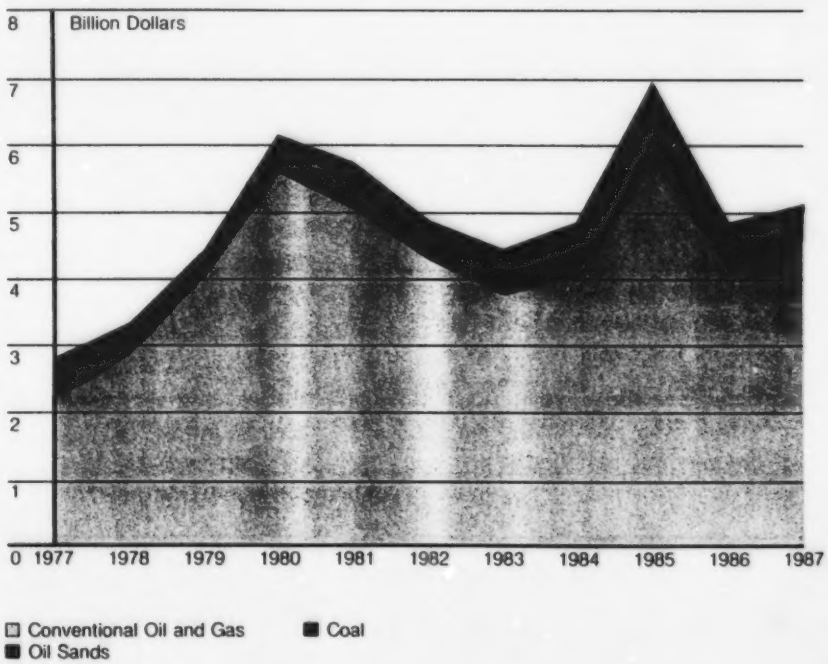
The provincial Crown owns 81 per cent of Alberta's energy and other mineral resources. Industry is granted the right to produce the resources with the Crown, as owner, retaining a share of production in the form of a royalty. In 1987/88 the province collected $2.32 billion in royalties; $1.3 billion was received from oil royalties and $1.02 billion from natural gas and other mineral royalties. The Crown's royalty share of light and medium crude oil was 54.9 million barrels. Its share of heavy crude oil and bitumen was 5.5 million barrels.

Crude oil prices recovered from 1986 levels and remained relatively stable for most of 1987/88. The improvement was fuelled by economic growth in Canada and improved energy export markets. Oil prices rebounded for a short time, with West Texas Intermediate (WTI) peaking at over U.S. $20 per barrel in the summer of 1987. Increased crude oil production also contributed to the recovery from the previous year's difficulties. As a result, the Canadian oil industry was better positioned to withstand fluctuations in financial markets and in commodity prices. The industry that emerged following the collapse of world oil prices in 1986 had streamlined its operations while waiting for world oil prices to firm; many had been restructured.

Oil industry profits grew and attracted significant capital throughout much of the year. Gas industry export sales grew considerably, as U.S. market conditions changed and as progress was made in resolving pipeline access issues. The outlook for the coal industry was brighter as demand, particularly in Japan, firmed in response to significant increases in the demand for steel and electricity. Combined with other factors on the supply side, the coal market tightened and prices increased slightly.

The combination of firmer prices until the fourth quarter, an improved fiscal regime and a restructured industry resulted in increased investment and activity in Alberta. Over $3 billion in new capital was attracted to the oil and gas sector in 1987. Total energy investment in Alberta climbed to $5.1 billion, but remained nearly $2 billion below the record 1985 level (Figure 1). Industry activity improved during the first half of 1987/88 compared with 1986/87. Selected indicators reflect both the improvement during the first

Figure 1
Energy Investment in Alberta



Source: 1977 through 1986 - Canadian Petroleum Association, Statistical Handbook; 1987 estimate - Oilweek Annual Review and Forecast; Coal - Statistics Canada Catalogue #61205; 1987 estimate - Statistics Canada.

half of 1987/88 and a decline in activity caused by weakening prices in the last quarter of the fiscal year (Figure 2).

However, some circumstances were less than favourable. The oil, gas and coal industries faced reduced revenues from export sales due to the relative strength of the Canadian dollar. Further, by early 1988, with uncertainty over oil markets, OPEC's failure to reaffirm a strong commitment to production quotas and price targets, and the resulting fall in the WTI oil price to U.S. $16.50 per barrel, capital investment in the oil industry during the last quarter of the fiscal year declined. With the exception of a seasonal winter price surge, the gas industry continued to face falling prices in both domestic and U.S. markets.

Fiscal year 1987/88 was one of change and adjustment for the department. It faced a business environment which had been changed dramatically by the volatility of prices and sales, and by the deregulation of energy markets and prices.

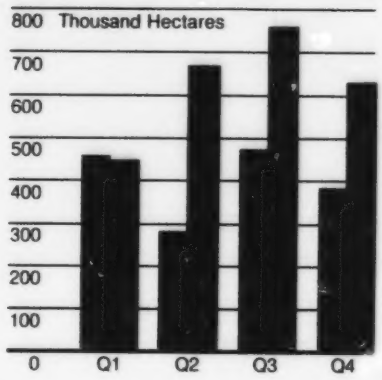
The main challenge for the department was to stimulate, encourage and negotiate investment for energy exploration, development, upgrading, processing and refining in Alberta.

The department improved the fiscal regime through its programs and initiatives. These continued to focus on enhancing the supply of conventional oil and gas by helping industry extend the established conventional non-renewable resource reserves base of Alberta. Special attention was given to Alberta's non-conventional reserve base (heavy oil and oil sands). The department was actively involved in negotiations and analysis respecting oil sands and upgrading projects and continued to work with other provinces and the federal

Figure 2
Selected Industry Indicators - Quarterly

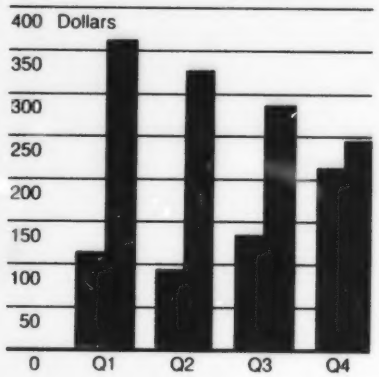
■ 1986/87 ■ 1987/88

Hectares Sold



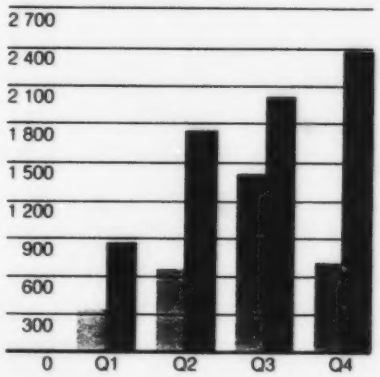
Source: Mineral Resources Division

Average Price per Hectare



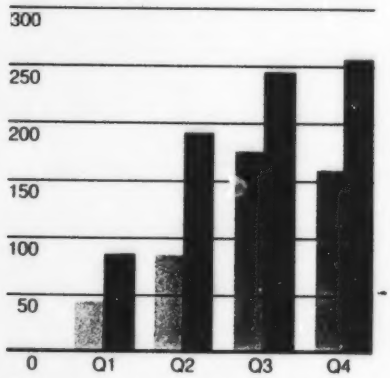
Source: Mineral Resources Division

Number of Well Licences Issued



Source: ERCB

Number of Rigs Drilling in Alberta



Source: Canadian Association of Oilwell Drilling Contractors

government toward establishing a framework for enhancing Canada's oil security.

The department also faced challenges posed by the transportation and marketing of oil and gas, and issues related to the policy for ethane. A major review of the ethane policy was initiated in co-operation with Alberta Economic Development and Trade. Consultation with petrochemical producers, straddle plant owners and producers was extensive. The policy was announced in August and, by year end, recommendations on its implementation were being prepared.

The department continued to provide leadership in research, development and the pre-commercial demonstration of new technologies to assist the Alberta coal industry.

ANNUAL REPORT STRUCTURE

The 1987/88 annual report contains information on the activities of the department and Alberta Oil Sands Equity. It begins with changes in the organizational structure followed by a discussion of the department's major activities under the headings of: development initiatives; security; markets and regulatory issues; energy conservation and efficiency; technology and energy resource development; fiscal mechanisms; revenues; and incentives. The report's final sections deal with administrative services, computer systems and communications activities and Alberta Oil Sands Equity. It closes with the Department of Energy's financial statements.

THE DEPARTMENT OF ENERGY

The Department of Energy is one of four agencies reporting to the Alberta Legislature through the Minister of Energy. Formerly it was part of the department known as Energy and Natural Resources, which was restructured into two separate departments in 1986.

The department plays a vital role in managing Alberta's substantial energy resources for the benefit of Albertans. It performs four basic functions: (1) it disposes of mineral rights and administers mineral agreements on behalf of the Crown; (2) it provides policy recommendations and advice on energy to the government; (3) it advises on, establishes and administers the fiscal regime and royalty system through which the government obtains its fair return from Alberta resources (including the negotiation of fiscal and royalty regimes for the major energy projects); and (4) it administers energy-related research, development and conservation programs.

In fulfilling its functions, the department administers the following legislation:

- Mines and Minerals Act
- Mineral Titles Redemption Act
- Freehold Mineral Rights Tax Act
- Gas Resources Preservation Act
- Take-or-Pay Costs Sharing Act
- Petroleum Incentives Program Act

Like other Government of Alberta departments, the department is organized along divisional lines. For several years five energy divisions (Mineral Resources, Policy Analysis and Planning, Mineral Revenues, Scientific and Engineering Services, and Finance and Administration) reported through their respective heads to the Deputy Minister. During 1987/88, the department was restructured to reflect the changed energy environment and the priorities of the government. The major changes were as follows:

- A new division, called Projects and Supply Development, was created. Its establishment reflects the government's renewed commitment to develop new supplies and upgrade energy resources within the province. Among its responsibilities are the negotiation of major project agreements and the development of fiscal and other policies pertaining to supply development.
- Responsibilities previously performed by the Energy Revenue Policy Branch of the Mineral Revenues Division were transferred to the new division.
- Two branches in the Policy Analysis and Planning Division were restructured and their roles redefined. The Economic Planning and Financial Analysis Branch and the Resource Statistics and Intelligence Branch were replaced by the Markets and Regulation, and the Forecasting and Financial Assessment Branches. These two new branches allow the department to better focus on analyzing markets, evaluating regulatory policy, forecasting energy revenues, and analyzing the financial position of the oil and gas industry.

Figure 3 outlines the modified structure of the department.

The Finance and Administration Division reports to the Deputy Minister of Energy and also serves the Department of Forestry, Lands and Wildlife. Legal services are provided by employees of the Attorney General's Department. These employees are seconded to the Department of Energy on a full-time basis.

Figure 4 provides a brief description of the responsibilities of each division in the Department of Energy.

Figure 3
Department of Energy Organization Chart

Figure 4
Functional Responsibilities

DEPARTMENT OF ENERGY

Projects and Supply Development

Responsible for policy, financial and technical evaluation of oil sands and upgrading projects and for the economic evaluation and analysis of the costs of finding and developing conventional oil, gas and coal.

Responsible for long- and short-term strategic planning to determine the economic and technical feasibility of development projects in Alberta's oil and gas industries, oil sands, and coal fields. It determines the appropriate government involvement or investment in each project and recommends a specific fiscal treatment by way of royalties, taxes, grants and incentives.

Policy Analysis and Planning

Responsible for policy analysis of issues relating to the marketing of oil, gas and coal, assessment of regulatory and legislative issues, forecasting energy prices, demand and revenues, and assessing and reporting on the energy industry. It is responsible for co-ordinating the department's communication policy, and for promoting energy efficiency and conservation.

Mineral Revenues

Responsible for calculating, collecting and verifying royalties paid for mineral extraction. It administers a number of incentive programs which enhance the exploration for and extraction of minerals in Alberta.

Mineral Resources

The division manages the Crown's mineral rights covering petroleum and natural gas, coal, oil sands, industrial and metallic minerals, placer minerals and salts. It ensures that non-renewable resource exploration and development are encouraged where they are in the public interest. It also handles the sale of available mineral rights and administers existing mineral agreements which have been leased for a specific period of time.

Scientific and Engineering Services and Research

The division administers the department's funding for energy research and development. It provides technical advice and support to the department, including technology assessment and planning. The division also is the focus for coal development activities.

Legal Services

The division provides legal advice and assistance on all matters pertaining to energy.

DEPARTMENT OF ENERGY/FORESTRY, LANDS AND WILDLIFE: FINANCE AND ADMINISTRATION

Automated Information Systems

Provides technical expertise and leadership in automated data and word processing systems to the departments. As part of its role, the division has made a commitment to enhance its development capabilities through the use of automated tools and by further exploiting information processing technology for management of data and information resources.

Human Resources

Provides services to the departments in the areas of recruitment, classification, wage and salary administration, employee relations, staff and organizational development, security and occupational health and safety. These services are provided through offices in Edmonton, Calgary and the Forest Technology School in Hinton.

General Services

Provides a full range of administrative support services to the operating divisions of the departments in their program initiatives. It manages records, designs forms, and provides mail and messenger services for all divisions. It also operates a reference library and provides editorial, desk-top publishing, office space, parking and telecommunications services. It operates the Land Status Automated System (LSAS) and supplies surface and subsurface data regarding public land to all provincial government departments. It has three branches: Accommodation Services, Corporate Records Management and Extension Services, and Crown Land Data Services.

Financial Services

Provides an administrative service to the other divisions of the departments by recording all the revenue received, accounting for all receivables, and processing all payments.

Internal Audit

Assists management in the effective discharge of its responsibilities of planning, directing and controlling by providing analyses, appraisals, recommendations and comments. It provides management with an independent measure of departmental activities, pinpointing problems before they happen. It concentrates on examining financial and operating controls and evaluating management techniques to make sure all divisions are as streamlined and efficient as possible.

LEASING AND OIL SANDS TENURE POLICY

During fiscal year 1987/88, initiatives were taken to encourage the exploration and development of oil and natural gas resources. Noteworthy among these were activities and negotiations involving the Wainwright Military Reserve (Figure 5). At year end, negotiations with the federal Department of National Defence (DND) were not yet complete although agreement in principle had been reached concerning the exploration and development of oil and natural gas resources under the Wainwright Military Reserve. Activities in the Wainwright area were unique for three reasons: (1) a seismic program was conducted on behalf of the Alberta Government by a contractor and the seismic data were made available to industry on a cost recovery basis; (2) DND agreed to allow exploration and development to proceed on a co-ordinated multi-operator basis; and (3) unlike petroleum and natural gas rights underlying the Suffield and Cold Lake (Primrose Lake) military ranges, rights underlying Wainwright were to be sold by non-refundable bonus competitive bid.

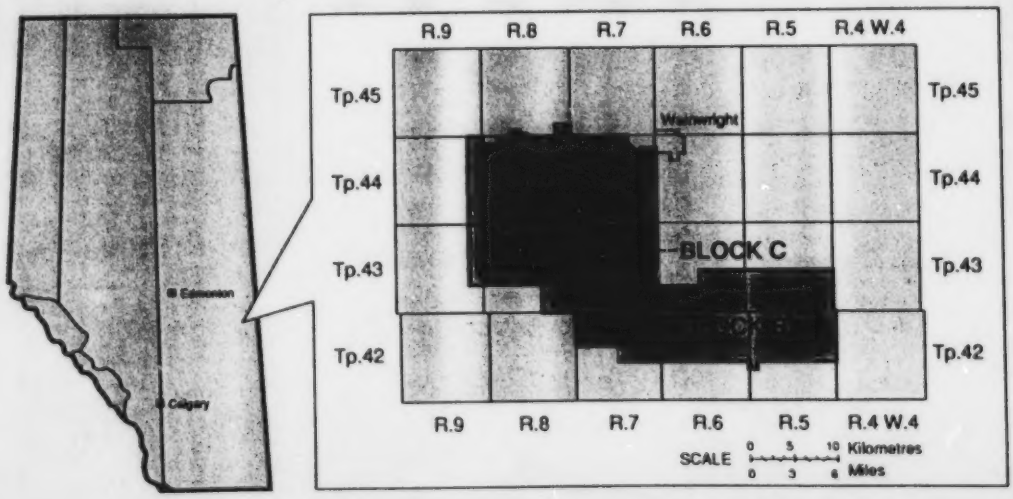
Other activities, undertaken to encourage the exploration and development of oil and natural gas resources involved issuing and reviewing petroleum and natural gas leases and a review of the Oil Sands Tenure Policy.

For petroleum and natural gas leases, the number of leases expiring during 1987/88 was 3 304 (1 993 417 hectares), 33 per cent lower than 1986/87 (Figure 6). This is partially attributed to the residual effect of the National Energy Program (NEP) on lease sales in 1982. Because the number of five-year leases purchased dropped significantly in 1981 and 1982 in response to the NEP, there was a corresponding decline in the number of leases that could be continued in 1987.

Year-end status of the 2 998 primary-term expiring leases containing 1 897 207 hectares was:

- Continued based on proven productivity:
  797 leases (26.6%);
  509 140 hectares (26.8%).
- Continued because of drilling operations near the end of the term:
  42 leases (1.4%);
  60 592 hectares (3%).

Figure 5
Wainwright Military Reserve



- Continued for a one-year period as potentially productive:
  328 leases (10.9%);
  96 923 hectares (5.1%).
- Extended beyond the end of the fiscal year because of circumstances beyond lessees' control:
  17 leases (0.6%);
  5 377 hectares (0.3%).
- Expired by their own terms:
  1 814 leases (60.5%);
  1 225 175 hectares (64.6%).

Reviews were conducted on 306 leases (96 210 hectares), previously continued for a one-year period as potentially productive. Twenty-nine per cent (28 152 hectares) of these lands were further continued as proven productive. Sixty-nine per cent (66 314 hectares) remained unproven and reverted to the Crown. The remaining two per cent (1 744 hectares) were continued because of active drilling operations.

In 1987/88, a province-wide review of previously continued leases was initiated to ensure there was adequate evidence of existing leases' productivity. Under the review, leases were monitored to identify those that ceased to be productive, particularly on leases with wells that were productive at one time and had not produced for several months. Also identified were leases where the spacing units contained wells which had never produced and which remained standing untested or with uneconomic tests. In these cases the department initiated action to take the rights of non-productive leases back and make them available to others.

Figure 6
Active Mineral Exploration and Development Agreements

	Number of Agreements				Thousand Hectares			
	March 31 1987	Issued	Cancelled	March 31 1988	March 31 1987	Issued	Cancelled	March 31 1988
Petroleum and Natural Gas Licences and Leases	51 936	7 392	3 240	56 088	26 736	3 140	2 856	27 019
Oil Sands Prospecting Permits	16	4	5	15	111	24	27	108
Oil Sands Leases	296	14	11	299	2 698	46	136	2 607
Coal and Coal Road Allowance	2 952	19	51	2 920	1 157	5	31	1 131
Metallic Mineral Exploration Permits	18	3	0	21	71	9	2	79
Metallic Mineral Leases	7	4	0	11	4	0	0	4
Other Minerals	137	8	4	141	19	1	1	19
Total	**55 362**	**7 444**	**3 311**	**59 495**	**30 795**	**3 225**	**3 053**	**30 968**

Source: Mineral Resources Division

In 1987/88, there were 26 800 producing leases in existence. During the year 5 891 of these were reviewed, resulting in 1 391 one-year notices being issued to lessees stating that the lands or rights will revert to the Crown unless the lessee provides the department with evidence of productivity.

Of particular concern to the department was the potential of drainage of natural gas from Crown land by wells located on freehold land. A review of producing freehold natural gas wells was conducted with a view to serving offset notices in the 1988/89 fiscal year.

The department initiated an Oil Sands Tenure Policy review in August 1987. The review was initiated to develop leasing policies more conducive to orderly development. An objective of the review was to determine how to accelerate development on leases. One option considered was to make tenure more clearly conditional upon development.

OIL SANDS DEVELOPMENT

In 1987/88 increased activity in oil sands development and

upgrading was a priority item. In May 1987 the department completed a major review of the Alberta oil sands and heavy oil resources situation and prepared a new development strategy. The major strategic objectives identified included the encouragement of orderly resource development, particularly of oil sands and heavy oil, energy industry diversification, and the encouragement of the maximum degree of value added to the province's resources within Alberta.

Throughout the fiscal year the department used a three-pronged approach to effect its strategic objectives: (1) it participated directly in projects; (2) it funded research to develop new technology and/or markets; and (3) it reviewed fiscal mechanisms and incentives to ensure consistency with the achievement of the strategic objectives. The first is discussed below, the latter two are discussed later in this report.

The department continued to encourage a number of projects of potential long-term benefit to Alberta. Agreements were made final for a new royalty regime for the Suncor Fort McMurray oil sands facility. Further, at year end, a number of other agreements, including the Lloydminster Bi-Provincial Upgrader Project, the OSLO Oil Sands Project, the Dome/Amoco Primrose Project and the Suncor Burnt Lake Project were still being negotiated.

In the Suncor Fort McMurray oil sands agreement, the department negotiated the replacement of the royalty regime that originated in the 1960s with a more appropriate, profit-sensitive one with a royalty structure similar to that of other oil sands projects. As part of the agreement, Suncor committed to undertake a "debottlenecking" program to expand bitumen production in the Fort McMurray plant to 63 000 barrels per day and expand upgrader capacity to 73 000 barrels per day.

The department was also involved in discussions with Husky Oil Ltd. and the Government of Canada and the Government of Saskatchewan concerning financial arrangements which would allow the proposed Bi-Provincial Upgrader Project in Lloydminster to proceed.

Also in the fiscal year, the department was actively involved in negotiations with the Other Six Leases Operation (OSLO) consortium respecting a large integrated oil sands facility. Negotiations were still underway at year end.

PETROCHEMICALS

Ethane has an important role to play in economic development. Ethane is a gas which had been used primarily for its heating value until the late 1970s when the Alberta Gas Ethylene Company began to use it as a primary feedstock in the production of ethylene at Joffre, Alberta. During the 1980s another use for ethane as an important injectant for enhanced oil recovery projects emerged. As natural gas producers made application to the Energy Resources Conservation Board (ERCB) for permission to construct field extraction facilities, objections were raised by the petrochemical industry. The need for a clear, long-term policy became evident in 1987/88 as two important, but competing uses for the ethane supply had evolved.

On Aug. 21, 1987 the Minister issued a policy statement on ethane. It announced measures to maintain a functioning market in ethane wherein both the petroleum and petrochemical industries have access to adequate sources of ethane supply and the incentive for further development of ethane-related activity in the province. More specifically, it provided that a minimum volume of ethane would be available for extraction at natural gas liquids extraction plants "straddling" the major natural gas trunk lines in the province. This meant that the ethane-based petrochemical industry has assured continuity of ethane supply at reasonable cost in order to maintain and expand its operations in the province. The Minister then requested the ERCB to conduct public hearings and make recommendations on implementing the policy.

SECURITY

Alberta's views on energy security of supply were outlined in the "Canadian Energy Security: the Oil Supply Option" paper prepared for the Energy Ministers' Conference in Newfoundland in August 1987. In it, the government advocated development of the province's energy resources and those of other Canadian provinces and territories as the long-term means to provide security of supply.

In 1987/88, and through activities conducted in the department, Alberta continued its participation in the Inter-Provincial Advisory Committee on Energy (IPACE). A draft Memorandum of Understanding on the responsibilities of the federal and provincial governments in the event of a petroleum emergency was in preparation at the end of 1987/88 for consideration by the Government of Alberta and governments of other provinces. The process leading to this Memorandum of Understanding was started by the Demand Restraint Subcommittee of IPACE in 1986.

While work with IPACE dealt with the short-term impact of a petroleum emergency, other activities focused on the longer-term question of security of supply. With the objective of providing Canadians with reliable supplies of energy in appropriate forms, at competitive prices, at the appropriate time, the department continued to formulate an energy development strategy. This was to be a broad strategy that was both economic and efficient which would promote a reliable supply of energy resources. It was to enhance the overall security of deliverable supply of the province's light and medium crude in commercial volumes from alternative sources as well as to ensure their deliverability where they are needed, without significant delay. Heavy oil and oil sands facilities are able to provide light and medium crude. Since long lead times are required to bring them on stream in commercial volumes — approximately 10 years — the wisdom of encouraging early investment in oil sands and heavy oil development was prominent in the strategy.

Long-term security considerations were important during negotiation of Crown agreements for major projects. These considerations were included during negotiations for the Lloydminster Bi-Provincial Upgrader, the OSLO and the Syncrude Expansion project agreements.

MARKETS AND REGULATORY ISSUES

The United States is a major market for Alberta's oil and gas industry. Open access to the U.S. market is necessary to the on-going adaptability, flexibility and resiliency of the industry. The negotiation of a Canada/U.S. Free Trade Agreement was of key concern during 1987/88.

Since the 1980 federal National Energy Program, efforts by the provinces to reverse the highly interventionist approach had led to fairly open energy trade with the United States. The Canada/U.S. Free Trade Agreement recognizes and consolidates the initiatives that have been taken in the energy sector to liberalize trade and deregulate markets on both sides of the border over the past several years. The agreement complements initiatives taken by Alberta to promote deregulation initiated by the March 1985 Western Energy Accord.

The department was involved in a number of studies of domestic marketing and the regulation of transportation of Alberta crude. It provided input to a submission made to the National Energy Board (NEB) that affected decisions on the tariff structures for crude oil pipelines. The department was particularly concerned that the tolls reflect the relative costs associated with transporting light and heavy oil.

For the natural gas industry, 1987/88 was a year of continued transition to market pricing, initiated by the October 1985 Agreement on Natural Gas Markets and Prices between the federal government and the western producing provinces and by an exchange of correspondence between the Alberta Minister of Energy and his federal counterpart in October 1986. In July 1987, the Minister met with the federal and provincial ministers representing the signatories to the October 1985 Agreement to re-affirm the commitment to an orderly gas deregulation process. The department continued to be involved in formulating policy to deal with security of supply and direct sales of natural gas.

Throughout 1986/87, the natural gas industry, regulatory authorities and governments had to address contractual and policy issues in an environment of much lower oil and gas prices than envisaged at the time of the October 1985 Agreement. Regulatory and policy decisions and contract amendments in 1986 set the stage for an open and active gas market. This market would have producers and new marketers selling gas directly to large end users and have them provide incremental supplies to distributors as envisaged in the October 1985 Agreement.

To further the transition to a deregulated environment, the consuming provinces' regulatory boards provided direct sellers with open access to distribution systems; the NEB adopted its operating demand mechanism which, through the adjustment of TransCanada-distributor contract volumes, provides direct sellers with open access to the TransCanada PipeLines system; and the Alberta Government passed the Take-or-Pay Costs Sharing Act which implemented a levy on direct sales, permitting the partial sharing of the TOPGAS carrying cost burden of TransCanada's "system gas" producers. However, the transition to a deregulated natural gas market has not been smooth. To ensure that the objectives of the October 1985 Agreement were met in an orderly fashion, the department monitored removal permits, held on-going discussions with other governments, and provided support to the Alberta Petroleum Marketing Commission (APMC) in regulatory hearings dealing with contracts between TransCanada PipeLines and the distribution companies in the consuming provinces.

In March of 1987, to be consistent with the deregulated environment, and at the same time ensure supplies of gas to residential and commercial users, the ERCB adopted surplus determination procedures which differentiated between "core" (residential and commercial) and "non-core" (industrial) consumers. In determining whether proposed exports of gas from the province are surplus to the future needs of Albertans, the new approach requires sufficient reserves to cover 15 years of current consumption of "core" consumers, plus reserves contracted by industrial consumers to provide for future industrial needs.

In July 1987, the NEB replaced its reserve-based surplus determination procedure with

a market-based one. In determining whether known supplies are adequate to meet foreseeable domestic needs and existing and proposed exports, the NEB moved from a surplus test formula approach to on-going monitoring activities and a public hearings complaint procedure.

A further step in the process of formulating policy to deal with security of supply and direct sales was taken on July 22, 1987, when the Lieutenant Governor-in-Council of Alberta requested a joint inquiry by the Public Utilities Board (PUB) and the ERCB. The boards were asked to study and report on the issues of: security of supply, core markets, contracting behaviour and the availability of transportation services for direct sales.

On Dec. 19, 1987, the ERCB and PUB issued their report. The boards recommended that security of supply be provided through contracts as opposed to regulation, with particular contract standards to apply to core consumers. Whether purchasing from distribution companies or directly from other suppliers, core consumers should be protected by 10- to 15-year, reserve-backed contracts for supply.

The Minister and the department began discussions with consuming provinces with a view to developing a contractual approach to security of supply that would provide adequate assurance of future supplies, particularly for essential service, or core, consumers. Security of supply policy remains one of the key outstanding issues in the domestic deregulation of natural gas.

In 1987 the department initiated a review of the Alberta gas royalty system. The objective was to identify changes that would make the royalty system easier to administer and more appropriate to an environment of market pricing. After an extensive review and consultation with producers, modifications to the natural gas royalty system were adopted to take effect Jan. 1, 1989. Under the new system, the Crown share or gross royalty rate for old and new gas is determined under the previous formulas using the Average Market Price which is set each month on the basis of the latest data on field prices. Having determined how much of the gas belongs to the province as its royalty share, the value of the share is then determined by the market. However, to ensure the province receives a fair return for its share, the minimum acceptable price for determining the value of the Crown share has been set at 80 per cent of the Average Market Price.

The changes resulted in significant adjustments to the natural gas royalty reporting system. Throughout 1987/88, the department was in close consultation with all interested groups, including industry and its associations, in an effort to develop sound and mutually acceptable administrative procedures.

ENERGY CONSERVATION AND EFFICIENCY

The department's conservation activities are designed to provide information and education programs to encourage organizations and individuals to use energy wisely and efficiently. Programs are also co-ordinated with those of other provincial and federal agencies and departments in order to ensure a comprehensive service for Albertans.

There are four programs: the Industrial, Residential, School and Transportation Energy Management Programs. They provide assistance to business, industry and institutions, homeowners and home builders, students and teachers, and motorists and fleet operators.

The Industrial Program is aimed at business, industry and institutions. It offers energy audits on request at buildings and plants throughout the province. In 1987/88 potential energy cost savings of approximately $2 million were identified during audits of 165 buildings — these audits were conducted using the computer-equipped Energy Bus. Numerous presentations were made at seminars and conferences to spread the word about energy conservation.

Focusing on homeowners and the housing industry, the Residential Program provides technical information and advice through publications, telephone advisory services and training. Approximately 4 000 inquiries were received and approximately 160 000 booklets were distributed throughout Alberta.

Other activities included a joint program with Energy, Mines and Resources Canada to provide 137 workshops for staff in building supply stores, an information support program for 225 home builders and the initiation of an Energy Awareness Week in Calgary.

Through the School Program, staff brought the energy conservation message to approximately 16 000 students in grades one to six and distributed over 200 teaching packages to high school physics instructors and others. A national energy educators' meeting was held in Edmonton for delegates from across Canada.

The Transportation Program provided information to help Alberta companies become more competitive and profitable through reduced energy costs and improved safety, upgraded vehicle performance and reliability, and extended engine life. The program was responsible for the development of initiatives under the federal Marketing Development Incentive Payments Program for the use of natural gas in vehicles and for preparing a study on ethanol fuels.

The department also played a leading role in the Inter-Provincial Advisory Council on Energy/Conservation and Renewable Energy Subcommittee (IPACE/CARES) in dealing with Energy, Mines and Resources Canada on federal program initiatives.

TECHNOLOGY AND ENERGY RESOURCE DEVELOPMENT

In 1987/88, the department provided administrative support for the Alberta/Canada Energy Resources Research Fund Committee (A/CERRF) through the Scientific and Engineering Services and Research Division. The committee provided funding contributions to industry, research institutions and universities (Figure 7). A/CERRF funding was used to support two priority areas: energy conservation and renewable energy research; and coal research.

In 1987/88, fourteen A/CERRF energy conservation and renewable energy research projects were underway; five projects were completed, one was terminated and eight were continued into 1988/89. Financial statements on these are contained in the A/CERRF Annual Review, 1987/88. Further project detail and a summary of program expenditures are contained in the Energy Conservation and Renewable Energy Research, Development and Demonstration Program Annual Review, 1987/88.

Alberta/Canada Energy Resources Research Fund Committee coal research activities include coal exploration, mining, preparation and upgrading, combustion, conversion and transportation, as well as environmental protection and assistance in developing coal markets. Details on these projects are provided in the Alberta Office of Coal Research and Technology Annual Review, 1987/88.

ALBERTA OFFICE OF COAL RESEARCH AND TECHNOLOGY

The Alberta Office of Coal Research and Technology co-ordinates government funding needed to develop coal-related technologies that create new uses for Alberta coals and enhance their competitive position in international markets. Most of these projects are funded jointly by industry and the Alberta/Canada Energy Resources Research Fund. In 1987/88, several projects were launched to promote the use of Alberta coal in Ontario, while others focused on clean coal combustion technologies or coal use in enhanced oil recovery. These were guided by the Alberta Coal Research Strategy of 1983.

Alberta Office of Coal Research and Technology projects were

Figure 7
A/CERRF

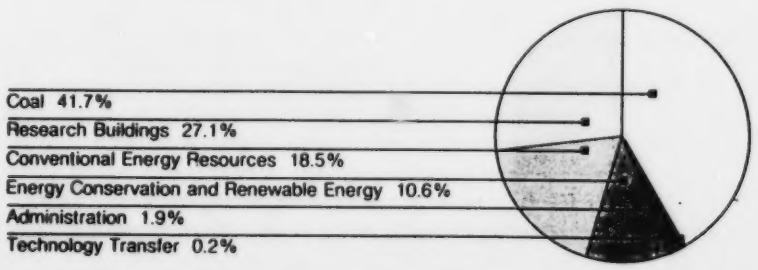
Alberta/Canada Energy Resources Research Fund (A/CERRF)

The Alberta/Canada Energy Resources Research Fund was created as a result of the 1974 agreement between the oil producing provinces and the Government of Canada to hold the wellhead price of domestic crude oil at $6.50 per barrel from April 1, 1974 to June 30, 1975.

In recognition of Alberta's agreement to sell its crude oil below international prices, the federal government committed increased funds to assist in strengthening and diversifying the Alberta economy. Of $144 million committed by the federal government, $96 million were directed at energy-related research projects.

The purpose of A/CERRF is twofold: to promote and support the development and efficient use of Alberta's existing and potential energy resources to meet the province's and Canada's medium- and long-term energy needs; and to encourage the development of scientific and technical expertise in energy research, development and demonstration in Alberta.

Since the fund began, $82 million was spent on research, development and demonstration projects focusing on coal, other conventional resources, energy conservation and renewable energy, and the construction of two energy research facilities. The distribution of program funding is as follows:



carried out in nine sub-program areas of coal research: resource evaluation, mining, preparation and upgrading, combustion, liquefaction, gasification, transportation, environment and markets. Also, funding for fundamental coal research at Alberta universities was provided through the Coal Research Grants Program.

The Alberta Office of Coal Research and Technology played a key role in developing a program for improving the competitiveness of western Canadian coal in Ontario. This included chairing the Intergovernmental Secretariat for Expanding the Use of Western Canadian Coal in Ontario and ensuring that the department's activities were supportive of the Secretariat's initiatives. The Secretariat was established by the premiers of the three western provinces and Ontario and the Deputy Prime Minister of Canada in early 1987.

The Alberta Office of Coal Research and Technology also played a key role in developing a program for improving the competitiveness of western Canadian coal in international markets. It encouraged Alberta's researchers to collaborate internationally and, with support from the Alberta Research Council, was involved in co-operative projects in Japan and the Federal Republic of Germany. Through the International Energy Agency, it was also involved with a number of other countries. Details on the research programs supported through the Alberta Office of Coal Research and Technology, and project expenditures, are contained in its Annual Review, 1987/88.

Seven booklets covering 11 projects in energy conservation, renewable energy and coal research projects were published to facilitate technology transfer. Topics included Opportunities to Use Coal in Enhanced Oil Recovery, Some Methods of Saving Energy with Fluorescent Lighting, and Energy-Conserving Characteristics of Common Building Materials and Methods. The booklets were made available to energy researchers, architects, designers and energy specialists.

HYDROGEN RESEARCH

Hydrogen is becoming increasingly important in upgrading bitumen and heavy oil. In 1987/88 the department, in co-operation with the private sector, the Alberta Research Council and the Alberta Oil Sands Technology and Research Authority (AOSTRA), focused attention on hydrogen production and supply research and development initiatives. In October 1987, the Alberta Minister of Energy and the Minister of Alberta Technology, Research and Telecommunications wrote to their federal counterparts supporting the formation of an Advisory Group on Hydrogen Opportunities and suggesting Alberta's participation and potential financial contribution of up to $2.5 million to cover the administrative costs of a Canadian Hydrogen Authority. Early in 1988, the department and the A/CERRF Committee approved a hydrogen technology research, development and demonstration program.

FISCAL MECHANISMS

Federal Tax Reform was introduced June 18, 1987. While it was generally beneficial to the minerals industry, oil sands development and major projects were hurt by the loss of the earned depletion and the introduction of a put-in-use rule.

Conventional activity would have been hurt by the phase-out of the Canadian Exploration and Development Incentive Program (CEDIP) and by changes in the tax treatment of flow-through shares, an important financing tool of junior companies.

To address these concerns the department, in concert with other departments and with industry organizations, made representations to the federal government on the fair implementation of phase one of tax reform.

In 1987/88, the department initiated a review of the Gas Cost Allowance structure and other elements of gas royalty administration practices. The review was on-going at the end of the fiscal year.

For oil sands projects, the department continued to move toward implementing profit-sensitive royalty regimes for major commercial oil sands projects. In 1987/88, a new royalty regime was agreed to for the Suncor Plant at Fort McMurray. The agreement, which became effective July 1, 1988, put the Suncor complex on the same general royalty terms and conditions as other oil sands-related projects.

REVENUES

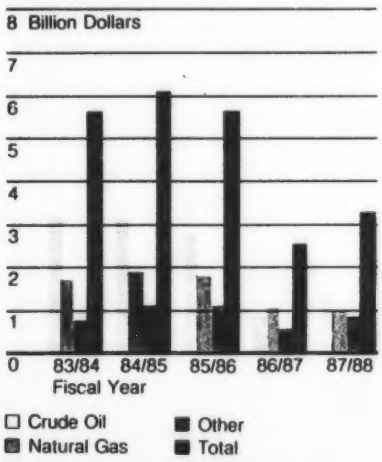
Gross energy revenue for the fiscal year ended March 31, 1988 was $3.3 billion compared to $2.6 billion in 1986/87. Petroleum and natural gas production increased during the year. However, gross revenues were reduced due to decreased natural gas prices. In addition, incentives provided as a result of the assistance package announced in October 1986 resulted in net revenue of approximately $3.1 billion (Figure 8).

The 1987/88 fiscal year was one of relative stability in terms of both production and price for petroleum royalties. The gross royalty share of production from Crown lands continued to remain relatively constant and was 25.3 per cent at March 31, 1988. Net royalty, after royalty holidays and oil recovery relief, increased by $425 million to $1.36 billion (Figure 9).

Implementation of natural gas price deregulation has contributed to existing downward price pressure on both domestic and export sales. The impact of "gas-to-gas" price competition, combined with the impact of the past two years' lower oil prices and competition of alternate fuels, resulted in lower average prices. Net Crown gas and by-product royalty revenues during the year were reduced by $86 million to $1 billion, a decrease of seven per cent from fiscal year 1986/87 (Figure 10).

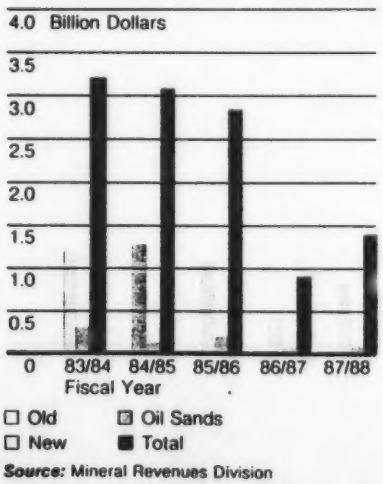
The partial recovery of crude oil prices during 1987 led to a gradual increase in oil sands activity. Oil sands royalty revenues for 1987/88 were $24.4 million, an increase of $13.2 million over the previous year. Commercial in situ projects, operated by BP Resources (Wolf Lake) and Esso Resources (Cold Lake), began expansion programs costing $200 million and $325 million, respectively.

Figure 8
Energy Revenues (Gross)



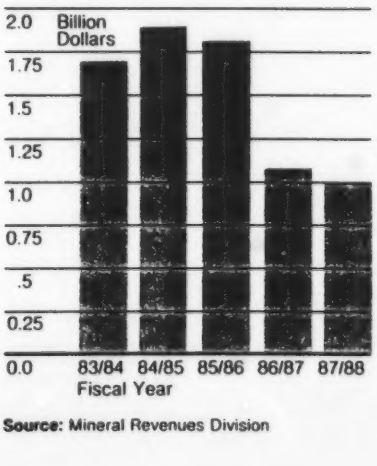
Source: Mineral Revenues Division

Figure 9
Petroleum Crown Royalties (Net)



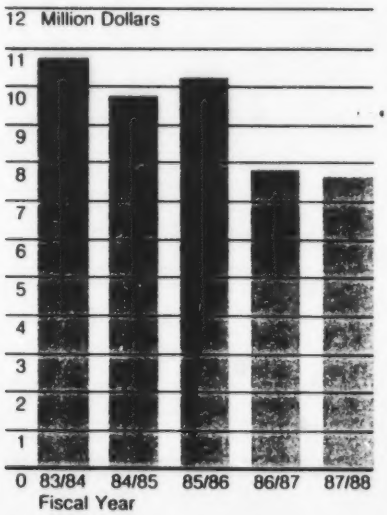
Source: Mineral Revenues Division

Figure 10
Natural Gas and Products Royalty (Net)



Source: Mineral Revenues Division

Figure 11
Coal Royalty (Net)

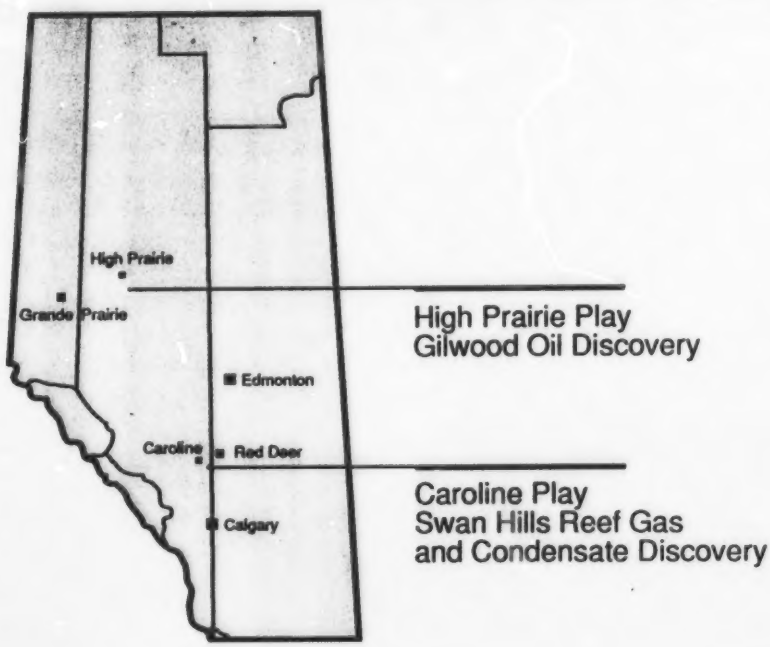


Source: Mineral Revenues Division

Many of the experimental projects, shut in during the 1986 price collapse, renewed operations. New experimental ventures by Amoco and Mobil were announced and undertaken, and negotiations were started for the construction of two new commercial in situ projects, both located on the Primrose Air Weapons Range.

While production and sales volumes for the coal industry increased, sales proceeds, and consequently royalty revenues, decreased. There was, however, an indication of a strengthening of sales values in the fourth quarter. The domestic thermal coal market again grew, reflecting increasing demand for electricity (Figure 11).

Figure 12
Sale of Crown Oil and Gas Agreements



Caroline Play

The Caroline gas and condensate discovery in the Swan Hills zone announced in early 1987, focused attention on this exploration hotspot. The initial discovery well was SHELL CAROLINE 7-18-34-4W5 and the field is thought to extend over an area of 50 sections or about 13 000 hectares. During the fiscal year, a total of $48.8 million in bonuses (6.4 per cent of total bonuses received) was realized from the sale of petroleum and natural gas rights in this play. The geology of the Swan Hills formation in the Beaverhill Lake group is fairly well understood but the subtle nature of the high porosity development at the reef margin makes the play very difficult to define seismically.

Shell has announced that the pool contains two trillion cubic feet ($56 \times 10^9 m^3$) of raw gas with about 200 million barrels ($31.8 \times 10^6 m^3$) of associated liquids and 20 million tonnes of saleable sulphur. The value of the final product will depend upon whether the ethane, propane and butane are sold as gas or as liquid. Development drilling is continuing as the companies attempt to define the limits of this huge reservoir.

Development is also proceeding in a co-ordinated manner to minimize the impact on populated areas near the wells, to provide benefits to the area and to ensure orderly operations. The Energy Resources Conservation Board is actively involved in moderating the regional impact.

High Prairie Play

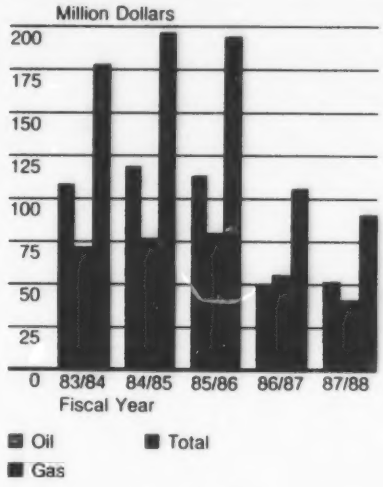
This Gilwood oil play was discovered by the drilling of the well GAO ET AL WPRAIR 8-7-73-16W5 in December 1986. The region was relatively unexplored before the discovery and not much was known about the potential of the area. The discovery well sparked a rush for the undisposed rights in the area. A total of $39.2 million in bonuses, comprising 5.2 per cent of the total bonuses received in the fiscal year, are attributed to this play. There are currently two wells producing from the Gilwood A Pool, averaging about 15 cubic metres per day and 30 cubic metres per day, respectively. Development is continuing along the strike to the southeast and northwest.

Net royalty from other minerals was $7.5 million, down from 1986/87 levels of $7.8 million. Royalties from salt, sodium sulphate, gold and quarriable minerals were relatively constant at $300 000.

Revenues from the sale of Crown petroleum and natural gas agreements were up substantially. Twenty-five public offerings were held in Calgary during the year where 2.5 million hectares of petroleum and natural gas leases and licences were sold. Bonus contributions from these sales were $759.8 million, 216 per cent higher than the previous year. During this fiscal year, a total of $48.8 million in bonuses was realized from the sale of petroleum and natural gas rights in the Caroline play. A total of $39.2 million in bonuses were attributable to the High Prairie play (Figure 12). These two plays were exceptionally large and accounted for nearly 12 per cent of the total bonuses received.

Freehold Mineral Tax is calculated on the value of hydrocarbon production from freehold producing properties and is attributed to the titles of the property. For the 1987 taxation year, 5 120 taxable titles resulted in a net tax assessment of $90.4 million (Figure 13).

Figure 13
Oil and Gas Mineral Tax Levy (Net)



Source: Mineral Revenues Division

INCENTIVES

A number of incentive programs stimulate activity, reward successful activity, and support existing activity by providing industry with improved cash flows, by promoting new conventional oil and gas discoveries and by increasing enhanced oil recovery activities in the province. They provide cost relief, or royalty relief, or royalty deferment. Some programs have expired but administration is required as the benefits earned under such programs may be used over time.

In 1987/88 cash grant assistance was available to eligible applicants under four programs: The Alberta Petroleum Incentives Program (APIP), the Development Drilling Assistance Program (DDAP), the Well Servicing Assistance Program (WSAP), and the Geophysical Assistance Program (GAP). Assistance by way of credits could be established under two of these programs: DDAP and GAP. Credits could also be established under the Exploratory Drilling Assistance Program (EDAP). All of these programs had expired by March 31, 1988.

The Five Per Cent Crude Oil Royalty Rebate program provided over $3 million in rebates in 1987/88. Over $100 million was provided in relief to reward discovery and encourage new exploration through the Deep Gas Royalty Holiday program, the Crude Oil Royalty Holiday program and the Exploratory Gas Well Incentive program.

In some cases, the government foregoes collecting some royalties today with the understanding that the royalties will be recovered later in the life cycle of energy development programs. Some of the arrangements provide relief for a specified time for programs involving innovative but risky conservation and/or production schemes. In others, royalty relief is provided for programs that involve enhanced oil recovery (EOR) schemes.

In the case of EOR schemes, the government provides relief by participating in allowable project costs of miscible flooding schemes to the extent of the Crown's royalty interest in the scheme. Because EOR schemes must produce the same or greater royalty revenues than if they had not been encouraged to proceed, the Crown receives additional revenues by deferring collection of the royalties. In addition, the practice sustains production and the level of conventional oil reserves, it maximizes existing reserves and it encourages additional capital investment.

An interest-free $85 million loan for an Expansion Study to increase plant capacity by 80 000 barrels per day was provided to Syncrude Canada Ltd. in 1986. The loan covers costs associated with research, design development and engineering specifications. With this assistance, the study is scheduled to be completed by early 1989, resulting in an early decision being taken concerning plant expansion.

For the 1987/88 fiscal year, the department advanced $35.4 million in Expansion Study funding. To the end of the fiscal year, cumulative Expansion Study funding of $44.8 million had been expended and 73 per cent of the study work had been completed.

ADMINISTRATIVE SERVICES, COMPUTER SYSTEMS AND COMMUNICATIONS

Finance and accounting, management of human resource administrative services and systems requirements for the Departments of Energy/Forestry, Lands and Wildlife are serviced by a common Finance and Administration Branch. During the fiscal year, the Communications Branch was moved from the Finance and Administration Branch to the Department of Energy's Policy Analysis and Planning Division.

FINANCE AND ACCOUNTING

In 1987/88, financial policies were updated to correspond to the new Departmental Financial System (DFS) accounting system. More efficient systems were implemented for processing invoices and purchase orders and a Self Pay Purchase Order (SPPO) system was made fully operational. The SPPO system allows authorized staff to pay vendors directly for departmental purchases. Previously, the system had been in effect on a test basis in the Departments of Energy/Forestry, Lands and Wildlife.

Financial activities that ensure internal accounting and operating controls function properly were evaluated and reported on through an internal audit. Emphasis was placed on reviewing program evaluation techniques used by management and on the consistency of objectives and results. A three-year audit program, the purpose of which was to address departmental needs and to provide an operational overview, was updated and continued in consultation with divisional management. Particular emphasis was placed on efficiency and on assisting management in down-sizing the department. The group identified areas and made recommendations where significant tangible savings could be achieved. It also conducted follow-up on earlier audits to ensure that any corrective action required had been implemented. In general, savings exceeded the cost of audits several times over.

HUMAN RESOURCES

Organizational change has resulted in structural changes and down-sizing of the department. By year end, the Department of Energy had 788 permanent full-time positions and 76 project positions.

Human Resource's services were used extensively to assist management in planning. These services were enhanced by the introduction of a new computer system. Human Resources advised management on, and processed requests for, classification changes resulting from organizational restructuring. Their services were also used to assist management in planning for current and future staff and organizational needs, and in reducing absenteeism and unsatisfactory performance.

In 1987/88, a video was developed that outlined the departmental structure and divisional operations. It was used to enhance the orientation program for new employees in Edmonton and in other regional locations.

Employees opting to take early retirement and the phasing out of the Alberta Petroleum Incentive Programs in Calgary contributed to down-sizing of the department. With the phasing out of the Alberta Petroleum Incentive Programs, emphasis was placed on securing alternate employment for the employees affected. The department provided employment counselling, conducted training courses aimed at résumé and interview preparation, and identified alternative employment opportunities. The majority of employees affected by the phasing out of the Alberta Petroleum Incentive Programs secured permanent employment either in the public or private sector.

COMPUTER SYSTEMS

By March 31, 1988, Energy/Forestry, Lands and Wildlife had 85 operational automated information systems, with departmental system activities costing $11.7 million for the fiscal year. The department continued to introduce new systems and to improve and integrate existing systems, both through an integration of computer applications and an integration of data.

Financial analysis and planning activities benefited from a new micro-based budgeting system. It allowed divisions to accumulate

their budgets at a basic level and then roll these up to a division level. As well, the system provided financial analysis and planning information used in preparing reports for Alberta Treasury, the deputy ministers of Energy/Forestry, Lands and Wildlife, and the ministers of the two departments.

In the area of systems integration, development work continued with the objective of integrating computer applications through integration of data. The department will continue this strategy with a development initiative to integrate the accounts receivable system with revenue and resources management systems.

Enhancements were made to specific elements of the Mineral Revenues System (MRS) supporting natural gas deregulation and incentives management, and to the Land Status Automated System (LSAS). In June 1987, the subsurface component (Release IV) of LSAS became fully operational. It replaced the Mineral Agreements Information System (MAIS) which had provided basic data since 1978 on the administration of Crown mineral agreements.

LSAS enhancements and changes are shown in Figure 14. LSAS now allows more land-related access to data and provides a more flexible means of generating reports. While basic mineral agreement data from computer searches is still available in hard copy, LSAS data are also available on magnetic tape at a nominal fee.

Further systems improvements were made with the acquisition in 1987/88 of the Correspondence Management Information System for senior executives. The system fulfils correspondence preparation and management information functions, and will eventually link all executive and management offices within the Departments of Energy/Forestry, Lands and Wildlife.

In the area of systems development, the records management program for the Departments of Energy/Forestry, Lands and Wildlife, called FROLIC (a File Room On-Line Information Control System), was endorsed as the new standard for the Government of Alberta and will be implemented in all other government departments within the next two years.

During 1987/88, major computer systems were subject to audit to confirm that controls are adequate and objectives are being met. Also, since microcomputers are so widely

Figure 14
LSAS Highlights

Land Status Automated System Highlights

A direct on-line update facility was implemented by Recreation and Parks through a security subsystem which prevents any corruption of Energy/Forestry, Lands and Wildlife data.

The Municipal Affairs Metis Settlement Subsystem was implemented, and in co-operation with Records Management, a review and clean-up of files to complement the system was initiated.

A data collection and validation for a post-implementation review of the Release I-III System (not subsurface system) was completed. It provided a benefit of $1.4 million in 1987/88. An annual benefit of $3 million is anticipated in future years.

A system for regional offices in Peace River, St. Paul, Rocky Mountain House and Lethbridge was implemented and a hardware acquisition and distribution plan was established to install the system in all Public Lands district offices (19 total) and in six Alberta Forest Service offices in 1988/89.

Release IV of LSAS was implemented comprising the subsurface data to replace the Mineral Agreement Information System (MAIS). The Mineral Resources Division administers and effects direct on-line update of all subsurface agreement data recorded on LSAS. LSAS Release IV increased the flexibility keys used for data access and formatting of reports. There will be no overt changes in services previously available through MAIS.

An Office Automation System (Digital Equipment Corporation) was purchased and implemented which established standards for office automation in the Departments of Energy/Forestry, Lands and Wildlife.

used within the department, new audit techniques were being developed to assess the controls associated with the use of microcomputers.

ENERGY COMMUNICATIONS AND INFORMATION DISSEMINATION

Major energy publications were produced to support investment including a booklet called Investment Opportunities in Oil and Gas in Alberta, Canada. This booklet was used with a portfolio of fact sheets called Energy in Alberta. A full-color booklet, Alberta Coal: Energy for the World, was published in English, Japanese and Korean. These were in great demand in Alberta, the rest of Canada and from the Government of Alberta's foreign offices throughout the world.

Annual reports/reviews were produced for the Advisory Committee on Heavy Oil and Oil Sands Development; the Alberta/Canada Energy Resources Research Fund (A/CERRF); the Energy Conservation and Renewable Energy Research Development and Demonstration Program; and the Alberta Office of Coal Research and Technology.

In the area of information dissemination, a highlight of 1987/88 was the opening of a public Information Centre in Calgary. This required the co-operative effort of Public Lands, General Services and Land Information Services (Maps Alberta) Divisions of the Departments of Energy/Forestry, Lands and Wildlife, and provided a store-front operation for services and information dissemination to the general public.

ALBERTA OIL SANDS EQUITY

Alberta Oil Sands Equity manages the province's investment in the Syncrude Project, the Other Six Leases Operation (OSLO) commercial project and in a development and new technology program on the six OSLO oil sands leases in northeastern Alberta.

The Syncrude Project experienced another successful year in 1987/88. Production during the fiscal year was 50 million barrels, down 2.4 million barrels from the previous fiscal year. The lower production was the result of planned coker shutdowns that occurred in the fiscal year. Syncrude continued to control operating costs during the year. However, there were some operating cost increases over the previous year. The higher costs combined with lower production, resulted in the average operating cost per barrel increasing to $14.67 from $13.37 in the previous fiscal year. Prices firmed and averaged $23.31 for the year compared to an average price of $19.61 last year. As a result of increased prices, the investment earned a net profit of $44.1 million, compared to $33.6 million in 1986/87. By March 31, 1988, Alberta's participation in the project amounted to $508.9 million, consisting of net cash advanced of $92.7 million and accumulated income of $416.2 million.

The Syncrude Capacity Addition Project (CAP) was 96 per cent complete at the end of March 1988. The project is expected to increase the capacity of the Syncrude Plant by 20 000 barrels per day to 157 000 barrels. The new units will be started up in August 1988, some four months ahead of the original schedule. The final cost of CAP is expected to be $685 million, $80 million below the original estimate.

The $85 million Syncrude Expansion Project Proposal Studies funded by Alberta were on schedule at year end at 73 per cent complete. The studies are designed to provide the information necessary to allow the owners to decide whether or not to proceed with a major expansion of the project. The expansion would add approximately 80 000 barrels per day to capacity and cost approximately $4 billion. The studies are scheduled to be complete by early 1989.

Alberta is also a 10 per cent participant in the OSLO consortium which was involved in negotiations with the Alberta and Canadian governments regarding the construction of a 75 000 barrel per day mineable oil sands project. The OSLO plant is to be located near Kearl Lake, about 40 kilometres northeast of the Syncrude Plant. The consortium also undertook investigation of promising new technologies that have the potential for substantial cost reductions. The consortium, in conjunction with the Alberta Oil Sands Technology and Research Authority (AOSTRA), continued with a Dredging/ Cold Water Extraction Demonstration Project and a Borehole Mining Project.

FINANCIAL STATEMENTS

ALBERTA ENERGY
Statement of Revenue
For the Year Ended March 31, 1988
(Unaudited)

	1987/88 ($000)	1986/87 ($000)
Royalties		
Oil, Conventional and Synthetic, and Products	$ 1 359 211	$ 1 015 902
Natural Gas and Products	1 011 171	1 097 180
Coal and Other	7 564	8 357
	2 377 946	2 121 439
Rentals and Fees		
Oil and Natural Gas, and Synthetic Oil	74 329	77 011
Coal and Other	3 182	2 959
	77 511	79 970
Crown Sales, Oil and Natural Gas Agreements	761 181	291 948
Mineral Taxes	92 210	96 292
Crude Oil Export Charges	(240)	(30)
Miscellaneous - Other	554	524
Gross Revenue	**3 309 162**	**2 590 143**
Less Incentive Programs		
Exploratory Drilling	714	(1 962)
Geophysical	259	(210)
Exploratory Drilling Assistance	195 773	0
Development Drilling Assistance	107	93 706
Geophysical Assistance	3	27 623
Well Servicing Assistance	0	50 000
	196 856	169 157
Net Revenue	**$ 3 112 306**	**$ 2 420 986**

Prepared by General Accounting Branch
Financial Services Division
September 13, 1988

ALBERTA ENERGY
Statement of Expenditures
For the Year Ended March 31, 1988
(Unaudited)

	1987/88 ($000)	1986/87 ($000)
Financial, Administration and Policy and Advisory Services Divisions		
Financial Services and General Services	$ 2 215	$ 2 470
Automated Information Systems	1 993	4 591
Human Resources	672	694
Internal Audit	110	111
Policy Analysis and Planning	3 641	3 382
	8 631	11 248
Other Divisions		
Mineral Resources	7 178	7 369
Mineral Revenues	8 071	8 188
Scientific and Engineering Services	5 226	9 704
Alberta Petroleum Incentive Programs	5 463*	7 536
	25 938	32 797
Executive Offices	914	1 180
Special Warrants and Special Programs		
Small Producers Advisory Services	363	135
Mineral Resources Compensation Payments	7 339	—
Syncrude Oil Sands Plant Expansion	35 468	9 362
Ethane Feedstock Price Equalization	—	13 643
	43 170	23 140
Total Expenditures	78 653	68 365
Less expenditure recoveries:		
Alberta Petroleum Incentive Programs	5 050*	6 613
Other	3 400	161
Net Expenditures	$ 70 203	$ 61 591

* See Note 2

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September 13, 1988

ALBERTA ENERGY
Notes to the Financial Statements
For the Year Ended March 31, 1988

Note 1 - Statement of Expenditures

Alberta Oil Sands Equity, Alberta Oil Sands Technology and Research Authority and Alberta Petroleum Marketing Commission are not included in the Statement of Expenditures.

Note 2 - Statement of Expenditures

Costs of $413 102 incurred by Alberta Petroleum Incentive Programs on behalf of Alberta Energy have been eliminated from the transfer from the General Revenue Fund. The costs are related to the administration of the following programs:

	1987/88	1986/87
Personnel Services	$ 81 395	$ 61 287
Well Servicing Assistance Program	140 376	481 811
Exploratory Drilling Assistance Program	165 674	253 642
Development Drilling Assistance Program	12 175	79 739
Geophysical Assistance Program	13 482	46 893
	$413 102	**$923 372**